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aquiferous system *a priori* less necessary, in order to explain the great changes of volume of the body of Mollusks. But I believe that, in addition, microscopic examination will show the direct continuity of the genital glands with the lateral orifices placed at the base of the foot in the Lamellibranchiata.

This communication of the vascular apparatus with the external water, has a very important bearing on the history of the nutritive processes. The physiological conceptions derived from the study of the higher animals are singularly affected by finding creatures which can at will throw out a portion of their blood, or, on the contrary, dilute with water that which is, *par excellence*, the nutritious element.

This would be sufficient to prove, were it necessary to do so, how wide is the difference between the vital processes of the lower and of the higher animals.

EXPLANATION OF THE FIGURES.

- A. *Pleurobranchus aurantiacus*, seen in a side view.
 - a. Heart.
 - b. External orifice of the sanguiferous system, placed before the branchiae and above the genital organ.
- B. Enlarged view of the heart, branchial vein, &c.
 - a. Auricle.
 - b. Ventricle.
 - c. External opening through which fluid may be injected into the heart.
 - d. Branchial vein laid open at this part to show the internal opening of the canal which leads from the external orifice c.
 - e. Penis.
 - f. Part of the branchial vein, unopened.

- II. "On the Repair of Tendons after their subcutaneous division." By BERNARD E. BROADHURST, Esq., F.R.C.S.
 Communicated by T. BLIZARD CURLING, Esq. Received
 November 4, 1859.

(Abstract.)

The results of the experiments which are recorded by the author are divided into three classes, which tend to show—

1st. That a tendon, having been divided, may reunite without leaving permanently a cicatrix.

2ndly. That the uniting new material may be drawn out to any required length, and in such case may, under gradual and carefully regulated extension, even acquire the thickness of the tendon itself; but that if the divided ends are widely separated after the section, and so remain, reunion will not take place.

3rdly. That the addition of new tendon does not impair the strength of the muscle, unless the length be more than sufficient, in which case it occasionally weakens the muscle.

The process of reunion is explained, and the appearances presented by the tendon in the various stages of reunion are detailed and illustrated by coloured drawings. Preparations of the parts operated on were also exhibited. The author concludes that, when the divided ends of the tendon are held in apposition and the limb is kept at rest, reunion will take place without leaving a cicatrix; but that when extension is made, the new material becomes organized, and persists as a permanent structure.

III. "On the Curvature of the Indian Arc." By the Venerable JOHN H. PRATT, M.A., Archdeacon of Calcutta. Communicated by Professor STOKES, Sec. R.S. Received November 8, 1859.

(Abstract.)

In a paper published in the Philosophical Transactions for 1855, in which the author calculates the effect which the attraction of the mountain mass north of India has upon the plumb-line at stations in the plains on the south, he applied the deflections as corrections to the astronomical amplitudes, to ascertain what influence they would have upon the determination of the curvature of the Indian Arc of Meridian. The method he adopted was to compare together the two measured arcs between Kaliana and Kalianpur, and between Kalianpur and Damargida. The calculation brought out an ellipse of which the ellipticity is $\frac{1}{4 \cdot 26}$. Colonel Everest had deduced by a comparison of the same arcs, but with uncorrected amplitudes, an